



CUSTOMER NO. 00270

PTO/SB/21 (08-00)

<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Serial Number	09/529,690	
	File Date	04/18/2000	
	First Named Inventor	Cox	
	Group Art Unit	1616	
	Examiner Name	Neil S. Levy	
Total Number of Pages in this Submission		Attorney Docket Number	JYG122USA

**ENCLOSURES (check all that apply)**

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<b>Remarks:</b>  Second Supplemental Response Attachments		

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm or Individual Name	William Bak
Signature	
Date	April 6, 2004

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this date: April 6, 2004.			
Typed or printed name	Melody Marsden		
Signature		Date	April 6, 2004

Burden of Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231



1616

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Roland Cox

Filed: April 18, 2000

Examiner: Neil S. Levy

Group Art Unit: **1616**

CERTIFICATE UNDER 37 CFR 1.8(a)

I hereby certify that this correspondence

is being deposited with the United States

Postal Service as first class mail on the

date indicated below in an envelope addressed

to: Commissioner for Patents

P.O. Box 1450, Alexandria, VA 22313-1450

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Signature

Date \_\_\_\_\_

## SECOND SUPPLEMENTAL RESPONSE

Sir:

Applicant filed a Request for Continued Examination (RCE) on September 11, 2003 with an Amendment. Thereafter, on January 20, 2004, Applicant submitted an original Declaration of Roland Cox with numerous exhibits attached thereto. The Declaration provided evidence of significant commercial success of the present invention and certificates and endorsements from relevant authorities. Paragraphs 9 and 10 of the Declaration filed on January 20, 2004 indicated that a further Declaration would be submitted with respect to experiments being run to show the superiority of the present invention over the cited prior art. Thus, this Second Supplemental Response is merely for the purpose of transmitting the promised inventor's affidavit.

Therefore, enclosed is a second original Declaration with exhibits RC5 and RC6. The Declaration is executed by Roland Cox, the named inventor of the present application.

The experiments reported in the attached Declaration clearly demonstrate the superiority of the present invention over the cited prior art of Kluft and Lebrun. See paragraphs 6-8 of the attached Declaration.

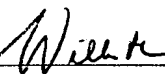
For reasons stated in the enclosed Declaration of Roland Cox, and in the previously filed Amendment and Declaration, Applicant respectfully submits that all rejections have been overcome and that the present application is in condition for allowance.

Applicant has made a significant advance in the development of bedding and like domestic articles that are capable of providing improved conditions for allergy and asthma sufferers by preventing the colonization and proliferation of HDM therein. His invention is meritorious.

A favorable action on the merits is therefore requested for claims 13, 16-18, 20 and 31-45.

Please charge any deficiency or credit any overpayment for entering this Second Supplemental Response to our deposit account no. 08-3040.

Respectfully submitted,  
Howson and Howson  
Attorneys for Applicants

By   
William Bak  
Reg. No. 37,277  
Spring House Corporate Center  
Box 457  
Spring House, PA 19477  
(215) 540-9216



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of Roland Cox

Group Art Unit: 1616

Serial No. 09/529,690

Examiner: Neil S. Levy

Filed: April 18, 2000

For METHOD OF CONTROLLING HOUSE DUST MITES AND BEDMITES

DECLARATION

I, Roland Cox of 9, Adelphi Close, Littleover, Derby, DE23 3XJ, United Kingdom declare that :-

1. I am the same Roland Cox who has made a previous Declaration in these proceedings dated 12<sup>th</sup> January 2004.
2. In my previous Declaration, I refer to the preparation of fibre samples as specified in an exhibit to that Declaration, Exhibit RC2. These are described as Sample A, which is fibre prepared according to the procedure of WO 97/24484 (Kluft) (necessarily modified as described), and Sample B, which is fibre prepared according to the procedure of Kluft but substituting Kluft's various agents by natamycin as used in the process of US 4,420,091 (Lebrun).
3. As I specify in paragraph 10 of this previous Declaration, these fibre samples A and B were sent for fungicidal testing by Nottingham Trent University (NTU) using the test protocol of Swiss Standard SN 195921, of which a copy was provided as Exhibit RC4.
4. Other fibre samples were also provided to NTU for fungicidal testing. All fibre samples were given test reference numbers as follows:

Ref. 02235

A fibre sample of Amicor AF fibre, which is an acrylic fibre incorporating a tolnaftate fungicide in accordance with the invention of the instant Application.

Ref. 03225

A fibre sample of "Courtelle" acrylic fibre containing no added biocides or fungicides, to act as a control sample.

Ref. 03226

The fibre sample referred to as Fibre Sample A in Exhibit RC2 comprising fibre treated as per the Kluft procedure.

**Ref. 03250**

The fibre sample referred to as Fibre Sample B in Exhibit RC2 comprising fibre treated as per the Kluft procedure using natamycin.

**Ref. 04009**

A fibre sample prepared in exactly the same way as Fibre Sample B but given five successive laundering washes at a water temperature of 60°C in a Wascator machine using a no-bleach detergent, with tumble-drying after each wash.

5. NTU carried out the fungicidal testing on these five fibre samples provided and described the test procedures and the results in their Report (Reference JT363B), which is appended hereto as Exhibit RC5.
6. The NTU Report (Exhibit RC5) speaks for itself but I will make a few comments. It shows the effective result we have come to expect for Amicor AF fibre (Ref. 02235)(the subject of the present Application) compared with the control fibre (Ref. 03225) containing no fungicide. It also shows that the fibre treated according to the Kluft procedure (Ref. 03226), was no more effective than the control fibre.
7. With regard to the fibre treated according to the Kluft procedure using natamycin as the fungicide (Ref. 03250), this result confirms that natamycin is an effective fungicide against *Aspergillus repens* as indicated by Lebrun. It shows a large area of inhibition (H). As the NTU Report says, this can indicate significant reserves of active substrate or weak fixation of the agent on the sample. Weak fixation of the natamycin would seem to be the case here, because the equivalent laundered sample (Ref. 04009) is shown to be ineffective against the *A. repens* fungus, producing a similar result to that of the control fibre containing no fungicide (Ref. 03225). As this fibre is ineffective against the *A. repens* fungus, it will not be able to control the proliferation of bedmites in the manner described in the instant Application.
8. In developing Amicor AF, it was a commercial pre-requisite that we needed a product that remained effective through multiple washing as experienced by domestic and institutional bedding fabrics. We succeeded in achieving this as clearly demonstrated by an early test report by NTU appended hereto as Exhibit RC 6, which shows maintenance of fungicidal effect through 200 washes. Launderability was not an issue for Lebrun; natamycin was just re-applied to the

bedding each time it was washed. Kluft's aim was to produce a product that is both effective and remains effective after laundering. These results show that this is not achieved, even when natamycin is substituted for Kluft's preferred agents.

I further declare that all statements herein made of my own knowledge are true and that all statements herein made on information and belief are believed to be true and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment or both under section 1001 of Title 18 of the United States Code and that such wilful statements may jeopardise the validity of the application or of any patent issuing therefrom.

R. Cox

Roland Cox

25/3/04

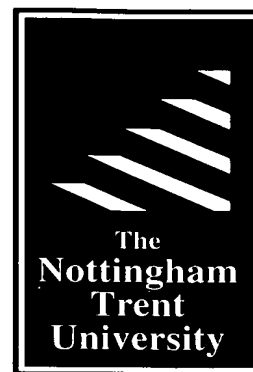
Date



Ref: JT363B

Date: 10.03.04

Phone: 0115 8 486658



Faculty of  
Science &  
Land-based Studies

School of Science

**REPORT FOR MR. ROLAND COX, ACORDIS ACRYLIC FIBRES LTD**

**A Summary of Investigations into the antifungal activity of samples tested against *Aspergillus repens* using the Swiss SNV 195 - 921 method for measuring antifungal activity.**

**Samples quoted in this report:**

Examples of samples tested are shown overleaf in Table 1.

In all cases, samples were tested against a "no sample" control.

**Notes on the Samples**

The samples were flash sterilised by subjecting them to a temperature of 115 for 2 minutes and a pressure of 1.667 atmospheres in a portable autoclave. None of the samples appeared to be adversely affected.

Extra information is provided in the footnote to Table 1.

**Micro-organism to be tested**

*Aspergillus repens* IMI 094150

**Table 1**      **Details of samples presented in this report**

REPORT NUMBER	SAMPLE REFERENCE	DESCRIPTION
JT325A	02235	Amicor antifungal fibre
JT361	03225	Black fibre control
	03226	Black fibre prepared by Kluft technique
	03250	Red fibre - Natamycin prepared by Kluft method
JT365	04009	Red fibre - Natamycin prepared by Kluft method and washed 5 times at 60°C



The  
Nottingham  
Trent  
University

Faculty of  
Science &  
Land-based Studies

School of Science

### Notes on the Samples

Sample 04009 was washed five times at 60°C in a Wascator machine using the British Standard Technique with detergent without bleach, tumble dried between washes.

### Maintenance and growth of the micro-organism

Good laboratory practice was used during all of the microbiological procedures. The samples were only opened in a laminar flow cabinet with the operative wearing gloves and employing aseptic technique to avoid contamination of the sample by our laboratory.

*Aspergillus repens* was grown and plated out on potato dextrose agar and diluted in Sabouraud dextrose broth.

### The SNV 195 921 test method for antimycotic activity:

The SNV 195 921 test protocol entitled 'Examination of the antimycotic effect of impregnated textiles by the agar diffusion method' was employed. Throughout the test, good laboratory practice and aseptic technique were used.



JT363B/3

Circles of samples of approximately 25 mm in diameter were cut by an operator wearing gloves and working in a laminar flow cabinet.

Agar plates containing a suitable, approved agar were prepared as follows:- The agar, which had been pH'd to 5.2 and sterilised at 121°C for 15 minutes, was cooled and dispensed in 10 ml amounts into conventional petri dishes.

A spore suspension was prepared by washing a plate in isotonic phosphate buffer, pH 6.8, and diluting the suspension to 10<sup>7</sup> spores per ml. 1 ml of this suspension was added to each batch of 100 ml of sterile agar which had been held at 45°C and the mixture distributed by swirling and inverting.

Ten ml of the spore suspension in molten agar was added to the plate containing 10 ml of sterile, solidified agar described above. Each plate was rotated gently but firmly to produce an even surface to the agar and, as quickly as possible the relevant circle of sample (lightly moistened) to the plate.

Plates were incubated at 25°C and were examined after 48 hours and 5 days.

#### **Evaluation of the test:**

Evaluation is based on the presence or absence of growth of bacteria in the contact zone directly beneath the specimen. In addition, formation of zones of inhibition around the sample are possible and, if present, should be quoted from the following equation:-

$$H = \frac{D - d}{2}$$

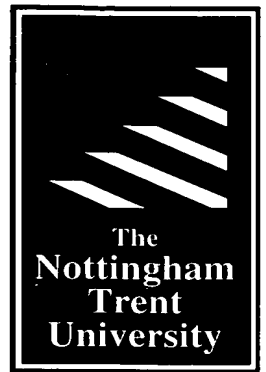
where H is the zone of inhibition;

D is the diameter of specimen plus inhibition zone (mm);

d is the diameter of the specimen (mm).

Following measurement of any zones present, the samples are removed and the contact zones are examined microscopically and the amount of any growth is compared to growth on the 'no sample' plates.

Six categories are recognised within the evaluation scheme. Two of these (both grades of 'good antibacterial effect') require a surrounding zone of inhibition, the first requiring a zone of greater than



*Faculty of  
Science &  
Land-based Studies*

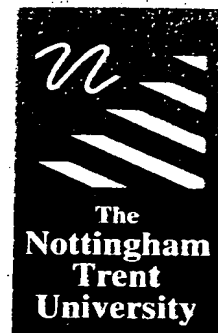
●  
School of Science



REF: JT167

DATE: 26.06.99

PHONE: 0115 9 486658



## REPORT FOR MR ROLAND COX, ACORDIS ACRYLIC FIBRES LTD.

An Investigation into the antimicrobial activity of the six samples provided using the Swiss SNV 195 -920 method (for antibacterial efficiency) and the Swiss SNV 195 - 921 method (for antifungal activity).

Faculty of  
Science &  
Mathematics

## Samples provided:

Six samples were provided namely:-

1	Coelima White Sheeting	Zero washes
2	Coelima White Sheeting	10 washes
3	Coelima White Sheeting	25 washes
4	Coelima White Sheeting	50 washes
5	Coelima White Sheeting	100 washes
6	Coelima White Sheeting	200 washes

tested against:  
No sample controls

Department of  
Life Sciences  
Head -  
Professor T Palmer  
BA PhD CBiol  
FIBiol FIBMS

## Notes on the Samples

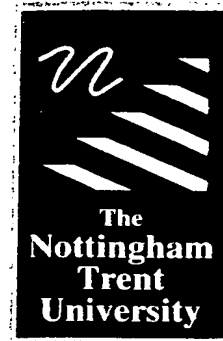
The samples were all flash sterilised at 115°C for two minutes before testing. All of the samples were weighted down during testing by the application of two, standard microscope slides.

All samples were white in colour, hydrophilic and remained flat during testing.

## Micro-organisms to be tested

*Staphylococcus aureus* NCTC 10788 (ATCC 6538)  
*Klebsiella pneumoniae* NCIMB 10341  
*Trichophyton mentagrophytes* NCPF 224

Clifton Lane  
Nottingham NG11 8NS  
Tel: (0115) 941 8418  
Direct Line:  
(0115) 948 6653  
Telex: 377534 Polnot G  
Fax: (0115) 948 6636



## Maintenance and growth of the micro-organisms

Good laboratory practice was used during all of the microbiological procedures. The samples were only opened in a laminar flow cabinet with the operative wearing gloves and employing aseptic technique to avoid contamination of the samples by our laboratory.

*Staphylococcus aureus* and *Klebsiella pneumoniae* were grown and diluted in tryptone soya broth and plated out onto tryptone soya agar.

*Trichophyton mentagrophytes* was grown and plated out on Sabouraud dextrose agar containing chloramphenicol and diluted in Sabouraud dextrose broth.

## Introduction to the SNV195 920 Test

The SNV 195 920 test protocol entitled "*Examination of the antibacterial effect of impregnated textiles by the agar diffusion test*" was employed. Throughout the test good laboratory practice and aseptic technique were used. The samples were again flash sterilised before testing.

Circles of samples of approximately 25 mm in diameter were cut by an operator wearing gloves and working in a laminar flow cabinet.

Tryptone soya agar plates were prepared containing 10 ml of 1.5% agar in conventional plastic petri dishes. To a further batch of the same agar (150 ml cooled to 45°C) was added 1.0 ml of an overnight culture of either bacterium (normally containing around  $10^9$  bacteria per ml). The mixture was evenly distributed by gentle inversion and swirling.

Two people working together then carried out the following operations. One person added a five ml aliquot of the bacterial suspension in molten agar to the plate containing 10 ml of sterile solidified agar described above. The plate was rotated gently but firmly to distribute the bacteria and agar evenly across the plate and as quickly as possible the second person added the relevant circle of sample to the plate.

The samples were added in a slightly moistened condition to the plate before the agar had set. Three discs of each of the samples were employed. Plates were incubated at 37°C, cellotaped and in an inverted position, and examined after 18 and 24 hours. Identical procedures were carried out for all of the bacteria.



### Evaluation of the test:

Evaluation is based on the presence or absence of growth of bacteria in the contact zone directly beneath the specimen. In addition, formation of zones of inhibition around the sample are possible and, if present, should be quoted from the following equation:-

$$H = \frac{D - d}{2}$$

where H is the zone of inhibition;

D is the diameter of specimen plus inhibition zone (mm);

d is the diameter of the specimen (mm).

Following measurement of any zones present, the samples are removed and the contact zones are examined microscopically and the amount of any growth is compared to growth on the 'no sample' plates.

Six categories are recognised within the evaluation scheme. Two of these (both grades of 'good antibacterial effect') require a surrounding zone of inhibition, the first requiring a zone of greater than 1 mm diameter and the second requiring a zone of 0 to 1 mm in diameter. A third grade is not dependent on a zone of inhibition but there must be absolutely no growth beneath the sample following microscopic examination.

The remaining three categories are graded on samples which exhibit no zone of inhibition and, after microscopic examination, show either weak growth (a near absence of growth), medium growth (a 50% reduction in growth beneath) or full growth (none or only slight reduction of growth beneath the sample).

The categories with their evaluation are shown in Table 1 overleaf.

Table 2 shows the results for *Staphylococcus aureus* and Table 3 shows the results for *Klebsiella pneumoniae*.

**Table 1**      **Categories of Grades for SNV 195 920**

Inhibition Zone (mm)	Growth in contact zone	Description	Evaluation (Grade)
>1.0	Nil	Inhibition zone exceeding 1mm and no growth	Grade 1 Good effect with pronounced inhibition zone
0 to 1.0	Nil	Inhibition zone up to 1 mm and no growth	Grade 2 Good effect*
Nil	Nil	No inhibition zone but no growth	Grade 3 Good effect**
Nil	Weak	No inhibition zone - nearly absence of growth.	Grade 4 Limit of efficacy but insufficient effect.
Nil	Medium	No inhibition zone - in comparison with control growth reduced by half	Grade 5 Insufficient
Nil	Full	No inhibition zone - in comparison with control growth not or only slightly reduced.	Grade 6 Insufficient

**Key to Table 1**

- \* The extent of the inhibition must only partly be taken into account. A large inhibition zone may indicate significant reserves of active substrate or weak fixation of the agent on the sample.
- \*\* The absence of growth even when there is no inhibition zone may be regarded as good effect as the formation of such an inhibition may have been prevented by a low diffusibility of the agent.

**Table 2**     The results and gradings of the samples tested against *Staphylococcus aureus*

SAMPLE	'H' (mm)				Growth in Contact Zone	GRADE
1 Zero wash	3	4	5	4	N	1
	2	2	3	3	N	1
	2	4	4	4	N	1
2 10 washes	3	2	3	3	N	1
	2	1	2	2	N	1
	2	3	2	2	N	1
3 25 washes	1	1	0	1	N	2
	1	2	1	2	N	1
	2	2	1	1	N	1
4 50 washes	7	7	7	8	N	1
	6	8	6	7	N	1
	5	7	7	5	N	1
5 100 washes	3	4	4	4	N	1
	4	4	3	3	N	1
	4	5	4	4	N	1
6 200 washes	0	0	0	0	N	3
	0	0	0	0	N	3
	0	0	0	0	N	3

**Key to Table 2**

Sample 6 had additional zones of reduced growth of 4 mm; samples 1, 3 and 5 had additional zones of reduced growth of 3 mm; samples 2 and 4 had additional zones of reduced growth of 2 mm.

No sample controls set up at the beginning and experiment all showed even, confluent to semi-confluent growth.

N indicates no growth beneath the samples.

There was no growth above any of the samples.

**Table 3**      The results and gradings of the samples tested against *Klebsiella pneumoniae*

SAMPLE	'H' (mm)				Growth in Contact Zone	GRADE
1 Zero wash	5	5	4	6	N	1
	6	6	7	8	N	1
	7	7	7	8	N	1
2 10 washes	6	5	6	5	N	1
	6	5	5	6	N	1
	6	6	5	5	N	1
3 25 washes	5	5	6	6	N	1
	4	4	5	5	N	1
	5	4	5	5	N	1
4 50 washes	5	5	5	5	N	1
	5	5	6	4	N	1
	5	4	5	4	N	1
5 100 washes	4	4	5	4	N	1
	4	4	5	5	N	1
	4	3	4	3	N	1
6 200 washes	6	5	4	5	N	1
	7	6	6	6	N	1
	7	5	6	6	N	1

**Key to Table 3**

All samples had additional zones of reduced growth of 2 mm.

No sample controls set up at the beginning and end of the experiment showed even, confluent to semi-confluent growth.

N indicates no growth beneath the samples.

There was no growth above any of the samples.

**The SNV 195 921 test method for antimycotic activity:**

The SNV 195 921 test protocol entitled 'Examination of the antimycotic effect of impregnated textiles by the agar diffusion method' was employed. Throughout the test, good laboratory practice and aseptic technique were used.



Samples of approximately 25 mm in diameter of the type used in the SNV 195 920 method described earlier in this report were used. All samples were only handled in our laboratory by sterile forceps and under aseptic conditions, even though they were not sterilised before use.

The test is very similar to the SNV 195 920 used to test the antibacterial effect with the major exception than instead of using a bacterium or mixed bacterial cocktail, a fungus is used - in this case *Trichophyton mentagrophytes* was used.

Agar plates containing a suitable, approved agar were prepared as follows:- The agar, which had been pH'd to 5.2 and sterilised at 121°C for 15 minutes, was cooled and dispensed in 10 ml amounts into conventional petri dishes.

A spore suspension is prepared by washing a slope in isotonic phosphate buffer, pH 6.8, and diluting the suspension to  $10^7$  spores per ml. 1 ml of this suspension was added to each batch of 100 ml of sterile agar which had been held at 45°C and the mixture distributed by swirling and inverting.

Two people working together then carried out the following operations. One person added 10 ml of the spore suspension in molten agar to the plate containing 10 ml of sterile, solidified agar described above. Each plate was rotated gently but firmly to produce an even surface to the agar and, as quickly as possible, the second person added the relevant circle of sample (lightly moistened) to the plate.

Plates were incubated at 25°C, cellotaped together and in an inverted position. They were examined after 48 hours.

#### Evaluation of the test:

The evaluation is based on the presence or absence of growth of the fungus in the contact zone directly beneath the sample and, on the formation of zones of inhibition around the sample if present. The measurement of zones and evaluation of the test is exactly the same as that described for the SNV 195 920 test earlier in this report.



## RESULTS

**Table 4**     The results and gradings of the samples tested against *Trichophyton mentagrophytes*

SAMPLE	'H' (mm)				Growth in Contact Zone	GRADE
1 Zero washes	4	3	4	3	N	1
	3	2	3	3	N	1
	2	3	3	2	N	1
2 10 washes	2	2	2	3	N	1
	3	3	2	3	N	1
	2	3	3	3	N	1
3 25 washes	2	2	3	3	N	1
	2	3	3	2	N	1
	3	3	2	2	N	1
4 50 washes	1	1	0	1	N	2
	1	1	0	1	N	2
	1	2	1	0	N	2
5 100 washes	0	0	0	0	N	3
	0	1	0	0	N	2
	2	2	1	0	N	1
6 200 washes	0	0	0	0	N	3
	0	0	0	0	N	3
	0	0	0	0	N	3

## Key to Table 4

All samples had additional zones of reduced growth of 2 to 3 mm.

No sample controls set up at the beginning and end of the experiment all showed even, confluent to semi-confluent growth.

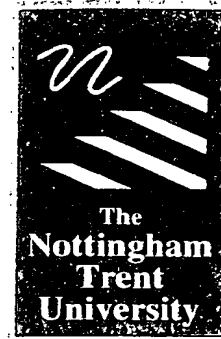
N indicates no growth beneath the samples.

There was no growth above any samples.

## Discussion of the SNV Test Results

- 1 Six samples were tested for antibacterial activity against *Staphylococcus aureus* using the SNV 195 - 920 test method.
- 2 All samples except 6 (200 washes: grade 3) showed significant zones of inhibition and were rated as Grade 1, the highest grade, showing antibacterial activity "with good effect and with pronounced inhibition zone".
- 3 The six samples were also tested for antibacterial activity against *Klebsiella pneumoniae* using the SNV 195 - 920 test method.
- 4 All samples showed significant zones of inhibition and were rated as Grade 1, the highest grade, showing antibacterial activity "with good effect and with pronounced inhibition zone". Interestingly, these samples appeared to be generally more active against *K. pneumoniae* than against *S. aureus*.
- 5 Finally the samples were also tested for antifungal activity against *Trichophyton mentagrophytes* using the SNV 195 921 test method.
- 6 In this case, only the first three samples showed grade 1 antifungal activity. For the first time, the effect of the wash process was apparent.

Nevertheless, assuming that the samples were free of bleach and other washing agents, they show a definite retention of antibacterial and antifungal activity even after 200 washes.



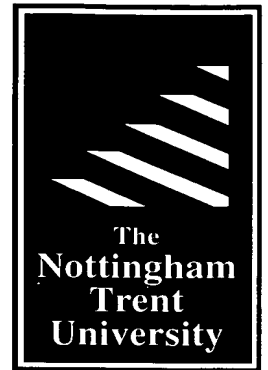
JT363B/4

1 mm diameter and the second requiring a zone of 0 to 1 mm in diameter.

A third grade is not dependent on a zone of inhibition but there must be absolutely no growth beneath the sample following microscopic examination.

The remaining three categories are graded on samples which exhibit no zone of inhibition and, after microscopic examination, show either **weak growth** (a near absence of growth), **medium growth** (a 50% reduction in growth beneath) or **full growth** (none or only slight reduction of growth beneath the sample).

The categories with their evaluation are shown in Table 2. Table 3 shows the results for *Aspergillus repens*.



*Faculty of  
Science &  
Land-based Studies*

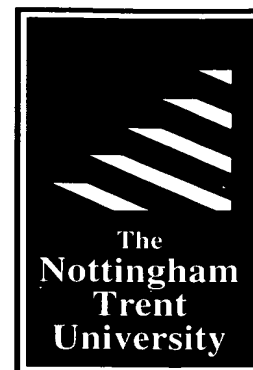
●  
School of Science

**Table 2**      **Categories of Grades for SNV 195 920**

<b>Inhibit- ion Zone (mm)</b>	<b>Growth in contact zone</b>	<b>Description</b>	<b>Evaluation (Grade)</b>
>1.0	Nil	Inhibition zone exceeding 1mm and no growth	<b>Grade 1</b> Good effect with pronounced inhibition zone
0 to 1.0	Nil	Inhibition zone up to 1 mm and no growth	<b>Grade 2</b> Good effect*
Nil	Nil	No inhibition zone but no growth	<b>Grade 3</b> Good effect**
Nil	Weak	No inhibition zone - nearly absence of growth.	<b>Grade 4</b> Limit of efficacy but insufficient effect.
Nil	Medium	No inhibition zone - in comparison with control growth reduced by half	<b>Grade 5</b> Insufficient
Nil	Full	No inhibition zone - in comparison with control growth not or only slightly reduced.	<b>Grade 6</b> Insufficient

\* The extent of the inhibition must only partly be taken into account. A large inhibition zone may indicate significant reserves of active substrate or weak fixation of the agent on the sample.

\*\* The absence of growth even when there is no inhibition zone may be regarded as good effect as the formation of such an inhibition may have been prevented by a low diffusibility of the agent.



*Faculty of  
Science &  
Land-based Studies*

•  
School of Science

*Handwritten signature or initials*

**RESULTS****Table 3** The results and gradings of the samples tested against *Aspergillus repens*

SAMPLE	'H' (mm)	Growth in Contact Zone	GRADE
JT325A 02235	2 2 0 1	N	1
	3 1 1 2	N	1
	1 1 2 1	N	1
JT361 03225	0 0 0 0	W	4
	0 0 0 0	W	4
	0 0 0 0	W	4
JT361 03226	0 0 0 0	W	4
	0 0 0 0	W	4
	0 0 0 0	M	5
JT361 03250	13 13 15 14	N	1
	11 10 13 10	N	1
	13 13 12 11	N	1
JT365 04009	0 0 0 0	W	4
	0 0 0 0	W	4
	0 0 0 0	W	4

**Key to Table 3**

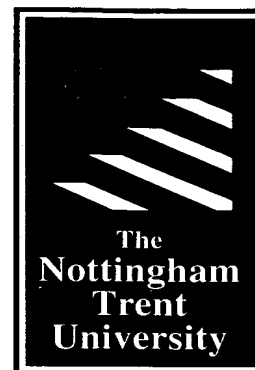
No sample controls set up at the beginning and end of the experiment all showed even, confluent to semi-confluent growth.

N indicates no growth beneath the samples.

W indicates weak growth beneath the samples.

M indicates medium growth beneath the samples.

There was no growth on the surface of each sample.



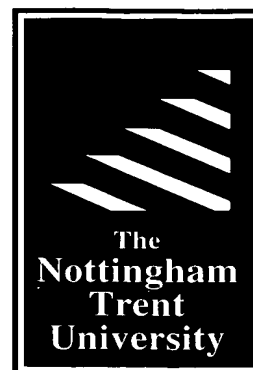
Faculty of  
Science &  
Land-based Studies

School of Science

*[Handwritten signature]*

**Discussion of the SNV Test Results**

- 1 A series of samples were tested for antifungal activity against *Aspergillus repens* using the SNV 195 921 test method.
- 2 It should be remembered that using this test method there are three "Grades" which indicate significant antifungal activity, namely Grades 1, 2 and 3.
- 3 The assumption should not be made that Grade 1 is better than Grade 2 and so on.
- 4 Grade 3 "antifungal activity with good effect" differs from Grades 1 and 2 only in that there is no inhibition zone.
- 5 This may indicate a non-leaching agent or conditions which do not allow leaching of the agent.
- 6 It should be remembered that in some cases a freely leaching agents could imply a lack of durability of activity.
- 7 The results indicate that Amicor alone shows very significant antifungal activity.



*Faculty of  
Science &  
Land-based Studies*

●  
School of Science